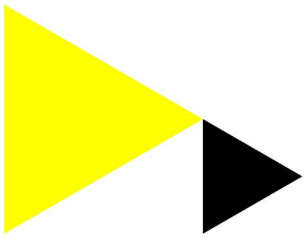
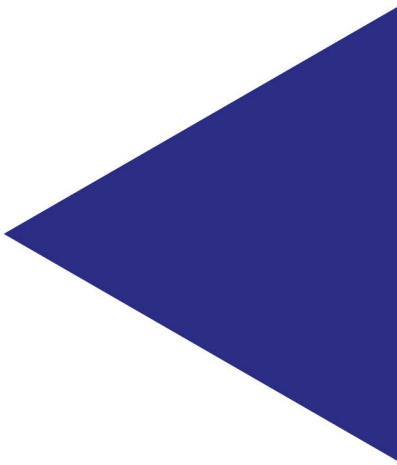
Assessments in the design studio: self-reflecting on MDD (AUAS) methods





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Assessments in the design studio: self-reflecting on MDD (AUAS) methods

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This paper discusses challenges in assessing design students within studio model education. It reflects on the assessment methods used in the M.Sc. Digital Design, Amsterdam University of Applied Sciences, with input from an online survey targeting former students and assessors of the programme. Building on the particularities they see in this assessment process and its perceived advantages and disadvantages; we reflect on the extent to which these methods respond to the intentions for their development. Lastly, we discuss these issues in relation to the literature with the purpose of providing input to others that, like us, are in search of improved assessment tools for studio-based education.

Keywords: design education, assessments, rubrics, design studio, reflection

Introduction

As a format for design education, the 'studio model' is rooted in the practice of the architectural studio. When taking part to a studio model education, design students are typically proposed a project in the form of a brief, often involving external organisations that play the role of the client. These briefs can be highly prescriptive, or they can be open ended, leaving more space for student's initiatives and interests (Giloi & Belluigi, 2017). The complexity of projects tends to increase as students advance in their studies and form the basis of the tacit knowledge needed for professional practice.

In the most traditional end of the design studio, the performance of students is assessed by tutors who guide the creative process and help students navigating through the brief and their relation to the client, in a mix of formative and summative assessments. However, with the increasing integration of design schools to universities and the development of educational policies and standards applying to all fields, this model of assessment is increasingly challenged. The challenges of traditional studio assessment do not only result from the organisational changes mentioned above, but also from internal debates in the field.

Some design educators defend the value of this model given the particularities of creative education and professional practice (Orr & Bloxham, 2013). Moreover, they argue for their authenticity in connecting students with "real world" issues and positioning them in the role of a professional practitioner from their first design experience, following a learning-by-doing approach (Axelsson, Eriksson, & Wideström, 2006; Taylor & McCormack, 2004). Others argue that it promotes an outdated designer profile, with a "superficial understanding of the problems they are presented with (…), treating the symptoms rather than the underlying root causes" (Meyer & Norman, 2020). Another downside mentioned in literature is the obscurity of traditional studio-based assessment practices, where the principles of reliability, validity and transparency are difficult to put in practice (Karahanoğlu, Alink, & Bakırlıoğlu, 2019). Yet another shortcoming mentioned by design scholars is the resulting isolation and marginalisation of creative disciplines from the other fields (Wang, 2010), hindering interdisciplinary collaboration, academic mobility, and the consolidation of design as an academic discipline.

Research has found that that too much importance is given to the product in assessment practices of creative disciplines (de la Harpe et al., 2009), and that a stronger focus on process and person is needed. Although products or portfolios are often used to evaluate the design process too, how this happens is not necessarily made explicit to students. An explicit focus on how the student works during assessment has been assigned the "potential to redirect the learner toward reflection and understanding" (Ehmann, 2004).

Assessments are not only moments of evaluation but are also functional to learning because students consider how they will be assessed during curricular activities. Moreover, assessments foster retrospective reflection from students on what they achieved. A good alignment between assessments and learning objectives, focusing on reflection, evaluation and improvement can upgrade design education to ensure long term learning and transparency in the objectives it pursues, while acknowledging the importance of tacit knowledge. However, there is no single or validated way to do this, developing the tools and procedures to do it remains a challenge (Whelan, Maher, & Deevy, 2017).

This paper discusses how we at the M.Sc. in Digital Design (MDD), a one-year programme at the Amsterdam University of Applied Sciences (AUAS), have dealt with these issues from the vantage point of a newly established curriculum, set up in 2017. Based on a survey distributed among graduates and former assessors of the programme, we reflect on how the methods used respond to the intentions for their development. These intentions include addressing some of the challenges of design studio assessments mentioned in literature. By asking assessment participants for a comparative perspective between these and other assessment methods they have experienced in an international design education context, we engage in a self-reflective process with the purpose of improving the programme's evaluation tools. In this paper, we share this self-reflective study with others that are also committed to find better assessment tools for design education.

In comparison to other subjects such as STEM, design education has been a somewhat neglected area of education research. Hounsell et al. (2007) for example identified 272 published articles that were categorised as appropriate to the topic of Innovative Assessment Across the Disciplines, of which only six fell under the category 'art, design and media'. Ehmann (2005) assigns this gap to the non-standard procedures and methods in the design education, highlighting assessment as a significantly neglected area. In this study, we contribute to a more active academic discussion about design education that has emerged in the last decade, as visible in the papers referenced above. Although the paper focuses on our own practices as a programme, it is not intended at promoting the choices we have made or the vision that drives them. On the contrary, it is based on input from the students and assessors that experienced it, following a bottom-up approach to discuss design assessment methods.

Context

The Master Digital Design is a one-year M.Sc. programme that enables students to develop their design competences, especially for the ability to work in interdisciplinary/multicultural teams for complex projects. In the Netherlands, design courses are offered by different institutions, including technical universities, art academies, and universities of applied sciences. Until recently, Dutch universities of applied sciences (UAS) could only offer practice-based education comparable to a bachelor level. This is an early example of a master programme at a UAS, and the first one in this faculty, existing since 2017.

As a Master of Science (M.Sc.) programme, the MDD is aligned with level 7 of the European Qualification Framework (EQF 7) and its Dutch counterpart (NLQF 7). The level's descriptors are articulated in a matrix of design-specific competences (Framing & Strategizing; Reflection & Awareness; Concepting & Ideation; Creating & Crafting; Self-Directed Learning), each divided in three indicators (see rubric in Appendix 1).

To achieve the competence profile required for graduating with a M.Sc., MDD students work in teams on three client projects that grow in length as the academic year advances (5, 8, and 14 weeks). They share project progress with peers in crit sessions chaired by the staff. Moreover, they are encouraged to pick up other self-directed projects if they wish. Four different tracks support the studio practice, namely Creation, Literacy, Research, and Strategy. These tracks include readings, lectures, workshops, and non-summative assignments and run in parallel to the client projects.

Summative assessments are the formal moments of evaluation in the MDD, and they take place twice per academic year: midterm (at the end of the first semester) and finals (at the end of the second semester), they award 30 ECs each. Students hand in two deliverables in advance: a) a process book including selected design work, and b) a reflection document explaining how this work matches the competence rubric. The selected work may include client projects, personal projects, and the assignments proposed in the different tracks. After considering these documents, a panel including three assessors - at least two of which are lecturers of the programme - interview each student individually for one hour. Building on the documents submitted, students can refer to any activity conducted while enrolled in the MDD programme to show how they meet the indicators in the rubric. After the interview, the student receives a grade calculated on the bases of the competences in the rubric, and qualitative feedback including impressions of the panel on the student's work and advice on future steps.

While developing the programme, this format was preferred over other ways of assessing studio-based education, seeking alignment with the programme's philosophy. In connection with the M.Sc. diploma offered, the MDD prioritizes a focus on process rather than outcomes. Moreover, it aims at fostering critical reflection emerging from practice rather than separating theory from design activity. In line with the previous points, the aesthetic quality or visual refinement of design solutions receives less attention than the understanding of the social, environmental, or ethical implications of their work. Lastly, it promotes independence and the crafting of an individual professional profile through self-directed learning. For example, having smaller exams at the end of each course could make the MDD less practical, as students would be tested on theory. Alternatively, grading the three projects that students do for external stakeholders would disincentivise students from working on self-initiated projects, thus reducing the emphasis on self-directed learning.

Practicalities and regulations aside, in this paper, we would like to reflect on the extent to which this format responds to the purposes with which it was designed. We are aware that this is not a common format for design assessments, and believe that our own reflection (graduates', assessors', and the authors') will be of value for others intending to tackle challenges in design studio assessments.

Method

We designed two separate online surveys for former students and assessors, these were distributed across all relevant respondents. The aim of the survey was to understand how they regard MDD assessment methods when compared to other methods they have experienced within design education. Respondents not reacting to the questions addressing this issue specifically in the form are not considered in the qualitative analysis below. This includes assessors that did not have experience in this role in other programmes. We received 27 relevant responses from former students (the total number alumni is 117) and 8 from former assessors. The responses were analysed by identifying differences and similarities with assessment methods practiced in other programmes, and advantages and disadvantages in relation to MDD methods according to respondents.

Results

The 27 former students completing the questionnaire are between 23 and 35 years old. They come from a variety of countries, within and outside Europe. Most of them are current living and working in the Netherlands. They work as designers in companies ranging from small design agencies and studios to big multinational consultancies. Five respondents are self-employed, another two are working in education, and yet another two are not working at the moment. Half of these respondents were students of the latest cohort (2020-2021), while the other half studied during the three previous academic years. Most of them followed design programmes for their bachelors, in a variety of universities and countries.

The 8 assessors were all active at MDD during the previous academic year (2020-2021), and some of them had been in that role for longer time. They previously assessed design students in several programmes and institutions within and outside Europe.

The data provided by respondents confirms that the assessment format at MDD is different to other design education programmes in several aspects, with specific advantages and disadvantages over other methods. The main differences highlighted in the surveys are mentioned below.

Unification of assessments

All graduates (except two respondents who do not describe or recall their bachelors' assessments) mention unification of assessments as a main difference with their bachelors. While in their bachelors they were assessed separately in each course or project (for instance, for a certain number of credits), at MDD the assessments are fairly independent from the different courses. Students get feedback from lecturers and coaches, and they use the work produced during these courses for assessments. However, they are not assessed by lecturers on their process or result within each course. This means that the design work produced in projects is only considered for assessment in relation to the programme's rubric (discussed in the next section).

As an example of this difference, one respondent explains that during their Graphic Design bachelor in Latin America, they were "usually assessed with grades via projects or exams. For more practical courses we would deliver a project. While in more theoretical courses we would take an exam or submit reports." Another respondent that graduated from a European B.A. in Communication Design had "three kinds of courses/classes with different kinds of assessments" including tests or written assignments for theoretical courses and practical design courses assessed by lectures based on design outcomes.

The unification of assessments seems to be particular in relation to other master level programmes too. Five respondents of the assessors' survey had previously taken a similar role in other masters (in the Netherlands and abroad), and they all mention this difference.

Respondents list a variety of advantages and disadvantages for the unification of assessments, summarized below:

Advantages of unification of assessments

- Time saving, and an opportunity to align expectations for staff
- Holistic and based on individual personal/professional profile of students
- Focused on earned skills rather than the output of students' work
- Gives students an opportunity to look back to their past work, consider their present position, and plan their next steps accordingly

Disadvantages of unification of assessments

- It is a hard and stressful experience, especially for students used to be assessed based on the "quality" of specific design output, they feel unsure of what is expected
- It can be frustrating for students to describe what they did in a past project for assessments when they do not have the opportunity of changing it any more
- Failing an assessment can be painful when there are only two assessment moments in the whole masters. More frequent assessment helps to steer actions to in order to pass along the way.

Use of (integrated) rubrics and indicators for expected competencies

Some of the programmes previously experienced by respondents used rubrics and explicit competences in their assessment process. Others not. For instance, a graduate that completed a B.A. in the Netherlands felt that "it was a relief to finally know what the parameters were and what was expected of students. This I had never experienced during my B.A." In line with point 1 above, the programmes using rubrics tend to use separate rubrics for their courses or final assignment/thesis. Another respondent recalls from their BSc in the Netherlands that "for each subject we had competences which we needed to fulfil. These were communicated to us in advance."

What is particular in MDD assessments is that there is a single rubric for the whole programme, which integrates all relevant competences across subjects. Respondents react differently to this method. Some appreciate the transfer of tacit knowledge from "master to apprentice" and deal well with the implicit rules that guide "good design." These tend to regard the rubric as an unnecessary bureaucratic tool. Others (like in the quote opening this section) appreciate the explicit nature of rubrics. Overall, respondents point to the following advantages and disadvantages of an integrated rubric:

Advantages of an integrated rubric

- The rubric guides the learning process, students work considering what will be expected from them during assessments
- Clarity in what is considered good work by the programme, for example that projects are expected to include ethical considerations
- The rubric separates grading from teacher-student relations, avoiding favouritism

Disadvantages of an integrated rubric

- Difficult to understand what is expected from students, especially those that had not been evaluated with the use of rubrics before
- The rubrics give the impression of impartiality, but the grades assigned to each competence depend on the interpretation of assessors

Importance, format, and content of the reflection document

Like in point 1 above, the survey results confirm that the reflection document is quite particular of this programme. This is one of the two deliverables requested to students for their assessments, next to a selection of their design work organised in a process book. The outline of the reflection document matches the rubric. Students refer to their design work in the process book to explain how it matches, one by one, the required indicators. These reflections are later discussed in an individual interview, the grading and qualitative feedback are a result of this process.

One assessor refers to MDD assessments as one where students "demonstrate their capability" rather than "displaying their ability," the latter describing other creative programmes where this respondent has a similar role. A European graduate with a background in arts highlights that "for the first time during my studies, I was more focused on the skills I earned, rather than the quality of my work. At first, it completely did not make sense to me, but then I thought it was really interesting to encourage my personal evolution as a designer."

The MDD staff 's choice to translate design "quality" into competences regarding the breadth of the creative process, or the acknowledgement of the social context of projects in a written document is controversial, and some graduates feel strongly about it. "In my bachelor's, I was assessed on the actual (design) work I did and the quality of it, while the process was also important. At the MDD the quality of the work was not of interest to anyone. As someone who has seen the quality of work delivered, I find this less fair and quite far away from the professional design world." Strong opinions emerge also in the other end, with some graduates acknowledging the influence of the reflection document in their learning experience and professional path: "A lot of my "a-ha" moments for the year came in the 2nd semester assessment. Tying my projects together

under one measure made me make deeper connections." Another graduate states that putting together the reflection document "was insightful and gave me the professional self-awareness I had been lacking before. I learned a lot about how I work; my default role in a team and my strengths/weaknesses as a teammate and as an individual designer."

Overall, respondents point to the following advantages and disadvantages of the reflection document:

Advantages of the reflection document

- It promotes critical and reflective practitioners
- It opens a path to become a better professional over time. Students are assessed on their ability to grow, they are not "tied" to the work
- It trains designers to clearly explain the rationale behind their decisions

Disadvantages of the reflection document

- More useful for those pursuing a research focused career
- It does not address the visual aspect of design quality
- Disadvantage for students with reading and writing disabilities and non-English speakers
- Can be frustrating to prepare and/or difficult to experience, as they are placed in a vulnerable position to reflect honestly on their own work (including its flaws) in front of others

Freedom in formats and deliverables to show design work, and in the methods to approach a design challenge

This aspect is less frequently mentioned by respondents in the survey, as the questionnaire did not address it specifically. However, a few respondents refer to this as a difference with other design programmes. There are no disadvantages mentioned, although freedom in the format of deliverables could be linked to lack of attention to visual aspects mentioned in previous sections. Positive statements about the freedom of formats include that of a graduate coming from a European creative B.A.: "the MDD provides more freedom in approaching an assignment, making yourself more critical about what to include than on a bachelors. This positively affects my professional profile as tasks are not always as straightforward as in the academic system." Another graduate with a Dutch B.Sc. in Communication and Media Design states that this freedom made them "realize where my true passions were and helped me be able to present what kind of designer I am (or aspired to be)."

Discussion

Building on the four characteristics of MDD assessments as described by respondents, and the advantages and disadvantages mentioned by them, in this section we reflect on how the methods used respond to the intentions for their development.

In our view, these methods help balancing studio-based education with university culture in a M.Sc. context. They are a way to navigate the challenges mentioned in literature and discussed in the introduction of this paper. They also respond to the specific characteristics of our education system and university policy, and our choice to be open to candidates from all disciplinary backgrounds. Coming back to the literature, some of the challenges of studio-based education in a university context mentioned by scholars are addressed by this method in the following ways:

Obscurity in studio-based assessments, with problems in terms of reliability, validity, and transparency (Karahanoğlu et al., 2019)

The use of rubrics communicated to students at the beginning of the academic year, a practice that is becoming more common in design education, addresses this point. Integrating all staff input into a single rubric and therefore two overall assessment moments along the year helps to align the expectations of lectures and management and enables a holistic assessment of students considering their individual profiles. A point of attention here is the language used in rubrics, which many students find unclear, adding insecurity to the already stressful experience of being assessed. Although every year we run an iteration of the indicators together with all lecturers for continuous improvement, we do not ask input from students in this process. We see a clear opportunity for improvement here.

Isolation and marginalisation of creative disciplines from the other fields (Wang, 2010)

The focus on reflection rather than on design artifacts for assessments, and the possibility of using group work as evidence, allows students with diverse disciplinary backgrounds to join the programme and potentially succeed during assessments. Although most of respondents to the graduates' survey had followed a design bachelor, that is not the case in the whole MDD alumni community, which is more varied.

Being assessed on the bases of text rather than visual elements is controversial and unexpected by some students. A point for improvement here is clearer communication to applicants. We promise students that

they will upgrade their design skills to a next level during the programme, but we could be more explicit in what is meant. Better communicating what is good design in this programme is vital. Moreover, clarifying that we rely on self-directed learning for technical and visual skills, while focusing on more analytical aspects of design practice in the assessments should be made clearer to them. This is our way to promote professional development over time, following the principles of sustainable assessments (Boud & Soler, 2016).

Superficiality in the understanding of problems, treating its symptoms rather than its causes (Meyer & Norman, 2020)

Assessments drive learning, therefore, competences addressing ethical aspects of design, the acknowledgement of complexity in the context of projects, and the extent to which design decisions are based on reliable evidence in the rubric (and the self-reflective nature of assessments as a whole) promote a specific mindset when approaching client projects' briefs. We praise the learning-by-doing process that develops in studio practice and the briefs bring a sense on real-world challenges that is much appreciated (Axelsson et al., 2006; Taylor & McCormack, 2004). However, these briefs do not always contemplate the aspects listed above, and we see the rubric as a balancing tool to ensure that they are addressed.

Some survey respondents see a gap between the content of the rubric and the professional field, where according to them analytical skills are given a second place to technical knowledge and visual literacy. Still, we like to think of education as a practice that does not only provide businesses with the human resources they need, but also actively shapes practice in the professional field in a meaningful direction.

Acknowledgements

We sincerely thank the MDD graduates and assessors for providing input and feedback, which we will surely incorporate in the coming period.

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Appendix 1: Rubric (indicator matrix)

2021/22 – M.Sc. Digital Design – Amsterdam University of Applied Sciences

Some general notes on the language in this document

1. We wrote this document in a gender-inclusive language. Specifically, we use "they/them/their" to refer also to individual students in an inclusive way.
2. Many indicators refer to "the student's work," "artifacts of which they are the authors," "their research," "concepts that they developed," etc. This means both the student's individual work (e.g., personal projects, assignments…) and group work (e.g., client projects…). When presenting group work, always show your own point of view and contribution, and acknowledge teammates' contributions when relevant.
3. Some indicators refer to "other designers' work," which can be the work of a company, of a specific practitioner, a classmate, etc. When introducing someone else's work, be specific andprovide URLs, images, etc.

Framing & Strategizing 1.1 – **MIDTERM** – The student uses adequate research methods to collect evidence in a design context.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student does not select or apply adequate research methods to collect evidence. The evidence collected is unreliable, unrelated, or insufficient.	The student understands, selects, and applies adequate research methods to collect evidence. The research activities presented are limited in scope, methods, or results.	The student understands, selects, and applies adequate research methods to collect evidence. The research activities presented are well-planned, executed, and documented. The student presents results that are analyzed in a comprehensive manner and are aligned with the purpose of the research.	The student understands, selects, and applies adequate research methods to collect evidence. The research activities presented are well-planned, executed, and documented. The student presents results that are analyzed in a comprehensive manner and are aligned with the purpose of the research. The student reflects on why the research design has led to these outcomes. Overall, the research design presented is particularly original, broad or deep.

Framing & Strategizing 1.1 – **FINALS** – The student uses adequate research methods to collect evidence in a design context.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student does not select or apply adequate research methods to collect evidence. The evidence collected is unreliable, unrelated, or insufficient.	The student understands, selects, and applies adequate research methods to collect evidence. The research activities presented are limited in scope, methods, or results.	The student understands, selects, and applies adequate research methods to collect evidence. The research activities presented are well-planned, executed, and documented. The student presents results that are analyzed in a comprehensive manner and are aligned with the purpose of the research.	The student understands, selects, and applies adequate research methods to collect evidence. The research activities presented are well-planned, executed, and documented. The student presents results that are analyzed in a comprehensive manner and are aligned with the purpose of the research. The student reflects on why the research design has led to these outcomes. Overall, the research design presented is particularly original, broad or deep.	Same as “good.” What the student shows, discusses, or reflects upon is particularly strong. The student’s engagement with the subject matter is outstanding.

Framing & Strategizing 1.2 – **MIDTERM** – The student presents an argument that is based on evidence to explain their design decisions. **NOTE.** For the purpose of this indicator, evidence is "reliable" when it comes from authoritative sources that include some peer-reviewed scientific publications. It is "related" when it considers users from the target group. It is "sufficient" when it comes from a variety of sources.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot explain their design decisions through an argument based on evidence. The student presents design decisions that rely on assumptions. The evidence presented is unreliable, or unrelated, or insufficient	The student explains some design decisions through an argument based on evidence. The argument presented is weakly connected to the student's design decisions (i.e., it is not always clear why a decision is supported by evidence). The evidence presented is reliable, related, and sufficient.	The student explains their design decisions through an argument based on evidence. The connection between the argument presented and the student's design decisions is clear (i.e., decisions follow evidence). The evidence presented is reliable, related, and sufficient.	The student explains their design decisions through an argument based on evidence. The connection between the argument presented and the student's design decisions is clear (i.e., decisions follow evidence), particularly insightful, and well-connected to their context. The evidence presented is reliable, related, and sufficient.

Framing & Strategizing 1.2 – **FINALS** – The student presents an argument that is based on evidence to explain their design decisions.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot explain their design decisions through an argument based on evidence. The student presents design decisions that rely on assumptions. The evidence presented is unreliable, or unrelated, or insufficient	The student explains some design decisions through an argument based on evidence. The argument presented is weakly connected to the student's design decisions (e.g., it is not always clear why a decision is supported by evidence). There are issues with the reliability of the evidence presented, or with its relatedness, or with its variety.	The student explains their design decisions through an argument based on evidence. The connection between the argument presented and the student's design decisions is clear (i.e., decisions follow evidence). The evidence presented is reliable, related, and sufficient.	The student explains their design decisions through an argument based on evidence. The connection between the argument presented and the student's design decisions is clear (i.e., decisions follow evidence), particularly insightful, and well-connected to their context. The evidence presented is reliable, related, and sufficient.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Framing & Strategizing 1.3 – **MIDTERM** – The student identifies the stakeholders of their work.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot identify the stakeholders in a design challenge. The student did not consider some fundamental stakeholders in their design. The student cannot explain how stakeholders were considered in their design.	The student identifies the most important stakeholders of their designs. The student points at specific design decisions to explain how they were considered. The explanation presented is not comprehensive.	The student identifies multiple stakeholders of their designs, including some indirect ones. The student points at specific design decisions to explain how they were considered. The explanation presented is clear and complete.	The student presents an exhaustive description of the direct and indirect stakeholders of their designs. The analysis is clearly connected to the social context of the design in question. The student points at specific design decisions to explain how stakeholders were considered. The explanation presented is clear, complete, and particularly insightful.

Framing & Strategizing 1.3 – **FINALS** – The student identifies the stakeholders of their work.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot identify the stakeholders in a design challenge. The student did not consider some fundamental stakeholders in their design. The student cannot explain how stakeholders were considered in their design.	The student identifies some stakeholders of their designs. The student did not consider some fundamental stakeholders in their design. The student points at specific design decisions to explain how stakeholders were considered. The explanation presented is not comprehensive.	The student identifies multiple stakeholders of their designs, including some indirect ones. The student points at specific design decisions to explain how they were considered. The explanation presented is clear and complete.	The student presents an exhaustive description of the direct and indirect stakeholders of their designs. The analysis is clearly connected to the social context of the design in question. The student points at specific design decisions to explain how stakeholders were considered. The explanation presented is clear, complete, and particularly insightful.	Same as “good.” What the student shows, discusses, or reflects upon is particularly strong. The student’s engagement with the subject matter is outstanding.

Reflection & Awareness 2.1 – **MIDTERM** – The student relates their work to its context.

NOTES

- In this indicator, "the student's work" means "what they created, the decisions they took, the technologies they used, the goals they aimed to accomplish…".
- In this indicator, "context" can refer to events in culture and society, ways of working in the professional field of design, other notable designs, political debates…
- Some examples of "reflecting on the relation between a work and its context" are: reflecting on whether a design innovates certain ways of working in the professional practice; reflecting on how a design opposes certain ideas that circulate in society; reflecting on whether a design supports certain social causes…

Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot relate their work in its context. The student cannot reflect on the relation between their work and its context.	The student relates their work to its context.	The student relates their work to its context. The student reflects critically on the relation between their work and its context.	The student relates their work to its context. The student reflects critically on the relation between their work and its context, and they express nuanced opinions.

Reflection & Awareness 2.1 – **FINALS** – The student relates their work to its context.

NOTES

- In this indicator, "the student's work" means "what they created, the decisions they took, the technologies they used, the goals they aimed to accomplish…".
- In this indicator, "context" can refer to events in culture and society, ways of working in the professional field of design, other notable designs, political debates…
- Some examples of "reflecting on the relation between a work and its context" are: reflecting on whether a design innovates certain ways of working in the professional practice; reflecting on how a design opposes certain ideas that circulate in society; reflecting on whether a design supports certain social causes…

Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot relate their work in its context. The student cannot reflect on the relation between their work and its context.	The student relates their work to its context but struggles to reflect on it.	The student relates their work to its context. The student reflects critically on the relation between their work and its context.	The student relates their work to its context. The student reflects critically on the relation between their work and its context, and they express nuanced opinions.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Reflection & Awareness 2.2 – **MIDTERM** – The student expresses a personal ethical view on design and connects it to their work.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot connect their design work to ethical considerations.	The student expresses a personal ethical view on design. The view expressed is abstract and lacks specific examples from the student's own work or from other designers' works.	The student expresses a personal ethical view on design. The student connects their ethical view to specific positive or negative examples from other designers' works. The student reflects on their own work from an ethical perspective.	The student expresses a personal ethical view on design. The student connects their ethical view to specific positive or negative examples from other designers' works. The analysis presented is deep and nuanced. The student reflects on their own work from an ethical perspective. The student points at some of their work to exemplify their ethical views.

Reflection & Awareness 2.2 – **FINALS** – The student expresses a personal ethical view on design and connects it to their work.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot connect their design work to ethical considerations.	The student expresses a personal ethical view on design. The view expressed is abstract and lacks specific examples from the student's own work or from other designers' works.	The student expresses a personal ethical view on design. The student connects their ethical view to specific positive or negative examples from other designers' works. The student reflects on their own work from an ethical perspective.	The student expresses a personal ethical view on design. The student connects their ethical view to specific positive or negative examples from other designers' works. The analysis presented is deep and nuanced. The student reflects on their own work from an ethical perspective. The student points at some of their work to exemplify their ethical views.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Reflection & Awareness 2.3 – **MIDTERM** – The student reflectively critiques a design of which they are the author in comparison to another from a different author.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot provide a critical reading of a design artifact. The student discusses only trivial similarities or differences when comparing two designs. The student cannot suggest how a design of which they are the author could be improved.	The student reflects on a design of which they are the author, and identifies strong and weak points, successful and unsuccessful design decisions, etc. The reflection presented includes some ideas for further improvement. The student critiques their design side-by-side another one. They compare their forms and functions, and they reflect on some broader implications of the two designs.	The student reflects on a design of which they are the author, and identifies strong and weak points, successful and unsuccessful design decisions, etc. The reflection presented could be a concrete starting point for another iteration on the student's design, with a clear direction. The student critiques their design side-by-side another one. They compare their forms and functions and reflect on the broader implications of the two designs. The student's opinion as a designer comes across clearly and is supported by the comparison.	The student reflects on a design of which they are the author, and identifies strong and weak points, successful and unsuccessful design decisions, etc. The reflection presented could be a concrete starting point for another iteration on the student's design, with a clear direction. The student critiques their design side-by-side another one. They compare their forms and functions and reflect on the broader implications of the two designs. They share nuanced insights that they learned from the critique. The student's opinion as a designer comes across clearly and is supported by the comparison.

Reflection & Awareness 2.3 – **FINALS** – The student reflectively critiques a design of which they are the author in comparison to another from a different author.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot provide a critical reading of a design artifact. The student discusses only trivial similarities or differences when comparing two designs. The student cannot suggest how a design of which they are the author could be improved.	The student reflects on a design of which they are the author, and identifies strong and weak points, successful and unsuccessful design decisions, etc. The reflection presented includes just a general direction for further improvement. The student discusses only trivial similarities or differences when comparing two designs.	The student reflects on a design of which they are the author, and identifies strong and weak points, successful and unsuccessful design decisions, etc. The reflection presented could be a concrete starting point for another iteration on the student's design, with a clear direction. The student critiques their design side-by-side another one. They compare their forms and functions and reflect on the broader implications of the two designs. The student's opinion as a designer comes across clearly and is supported by the comparison.	The student reflects on a design of which they are the author, and identifies strong and weak points, successful and unsuccessful design decisions, etc. The reflection presented could be a concrete starting point for another iteration on the student's design, with a clear direction. The student critiques their design side-by-side another one. They compare their forms and functions and reflect on the broader implications of the two designs. They share nuanced insights that they learned from the critique. The student's opinion as a designer comes across clearly and is supported by the comparison.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Concepting & Ideation 3.1 – **MIDTERM** – The student presents a process that led to a design of which they are the author, and explains the various parts, design decisions and iterations that characterize it.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot identify and explain their decisions within an iterative process. The student cannot show how and why a step followed another. The student did not document properly their process.	The student presents an iterative process that led to a design of which they are the author. The various parts of the design process are presented coherently. The student explains the most significant decisions they took.	The student presents an iterative process that led to a design of which they are the author. Other alternative concepts are also presented. The various parts of the design process are presented coherently and show progressive refinement. The student identifies and explains the design decisions they took.	The student presents an iterative process that led to a design of which they are the author. Other alternative concepts are also presented. The various parts of the design process are presented coherently and show progressive refinement. The student identifies and explains the design decisions they took. The rationale provided is particularly well-supported and articulated.

Concepting & Ideation 3.1 – **FINALS** – The student presents a process that led to a design of which they are the author, and explains the various parts, design decisions and iterations that characterize it.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot identify and explain their decisions within an iterative process. The student cannot show how and why a step followed another. The student did not document properly their process.	The student presents an iterative process that led to a design of which they are the author. The student cannot show how and why a step followed another.	The student presents an iterative process that led to a design of which they are the author. Other alternative concepts are also presented. The various parts of the design process are presented coherently and show progressive refinement. The student identifies and explains the design decisions they took.	The student presents an iterative process that led to a design of which they are the author. Other alternative concepts are also presented. The various parts of the design process are presented coherently and show progressive refinement. The student identifies and explains the design decisions they took. The rationale provided is particularly well-supported and articulated.	Same as “good.” What the student shows, discusses, or reflects upon is particularly strong. The student’s engagement with the subject matter is outstanding.

Concepting & Ideation 3.2 – **MIDTERM** – The student provides a rationale for selecting a certain concept over others that they developed.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot satisfyingly provide a rationale for selecting a specific concept.	The student can provide the rationale for selecting a specific concept.	The student can provide the rationale for selecting a specific concept. The discarded concepts are also well presented, and the student can make an argument for their choice.	The student can provide the rationale for selecting a specific concept. The discarded concepts are also well presented, and the student can make an argument for their choice. The student can reflect critically on their choices.

Concepting & Ideation 3.2 – **FINALS** – The student provides a rationale for selecting a certain concept over others that they developed.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot satisfyingly provide a rationale for selecting a specific concept.	The student can provide the rationale for selecting a specific concept. The rationale presented for selecting one concept over others is trivial (i.e., the discarded concepts are weak, technically unfeasible…).	The student can provide the rationale for selecting a specific concept. The discarded concepts are also well presented, and the student can make an argument for their choice.	The student can provide the rationale for selecting a specific concept. The discarded concepts are also well presented, and the student can make an argument for their choice. The student can reflect critically on their choices.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Concepting & Ideation 3.3 – **MIDTERM** – The student presents how their own design process has evolved over time.

NOTE. The following are NOT pertinent for this indicator: project management (e.g., setting milestones), knowledge management (e.g., reading & annotating), and team management (e.g., resolving conflicts).

Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot show an evolution in their approach to a design challenge.	The student can point at differences in how they approached design challenges in the past, and at the current point of their career.	The student can point at differences in how they approached design challenges in the past, and at the current point of their career. The student reflects on the differences between the various processes that they experimented with and identifies positive and negative points.	The student can point at differences in how they approached design challenges in the past, and at the current point of their career. The student reflects on the differences between the various processes that they experimented with and identifies positive and negative points. The student explains how they would like to improve their process in the future and outlines a concrete plan to do so.

Concepting & Ideation 3.3 – **FINALS** – The student presents how their own design process has evolved over time.

NOTE. The following are NOT pertinent for this indicator: project management (e.g., setting milestones), knowledge management (e.g., reading & annotating), and team management (e.g., resolving conflicts).

Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot show an evolution in their approach to a design challenge.	The student can point at differences in how they approached design challenges in the past, and at the current point of their career. The student's presentation of the various processes lacks critical reflection.	The student can point at differences in how they approached design challenges in the past, and at the current point of their career. The student reflects on the differences between the various processes that they experimented with and identifies positive and negative points.	The student can point at differences in how they approached design challenges in the past, and at the current point of their career. The student reflects on the differences between the various processes that they experimented with and identifies positive and negative points. The student explains how they would like to improve their process in the future and outlines a concrete plan to do so.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Creating & Crafting 4.1 – **MIDTERM** – The student shows their use of digital media and the technical choices they made in the execution of their work.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student provides only superficial reasoning (e.g., they are unaware of alternatives, or rely on default choices). The student presents no clear evidence to support their choices.	The student shows their use of digital media and the technical choices that they made in the execution of their work. They can point at other technical choices they could have made but didn't and can explain why the choices they made are justified.	The student shows their use of digital media and the technical choices that they made in the execution of their work. They are well aware of other technical choices they could have made but didn't, and can use concrete examples, experiments, research, etc. to argue in favor of their choices.	The student shows their use of digital media and the technical choices that they made in the execution of their work. The argument presented is well-constructed and offers a nuanced personal perspective. They are well aware of other technical choices they could have made but didn't, and can use concrete examples, experiments, research, etc. to argue in favor of their choices.

Creating & Crafting 4.1 – **FINALS** – The student shows their use of digital media and the technical choices they made in the execution of their work.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student provides only superficial reasoning (e.g., they are unaware of alternatives, or rely on default choices). The student presents no clear evidence to support their choices.	The student shows their use of digital media and the technical choices that they made in the execution of their work. They can point at other technical choices they could have made but didn't, but they don't present clear evidence to support their choices.	The student shows their use of digital media and the technical choices that they made in the execution of their work. They are well aware of other technical choices they could have made but didn't, and can use concrete examples, experiments, research, etc. to argue in favor of their choices.	The student shows their use of digital media and the technical choices that they made in the execution of their work. The argument presented is well- constructed and offers a nuanced personal perspective. They are well aware of other technical choices they could have made but didn't, and can use concrete examples, experiments, research, etc. to argue in favor of their choices.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Creating & Crafting 4.2 – **MIDTERM** – The student presents the influence of making in their design process.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student presents a haphazard approach to making. They cannot articulate any specific design insights derived from their making.	The student can point at some relevant making and prototyping activities that they conducted and shows how these influenced their overall design process.	The student demonstrates their making skills by pointing at the results they obtained and shows how the process of executing their work influenced their overall design process. They present satisfactory evidence of progressive refinement in their design process.	The student demonstrates their making skills by pointing at the results they obtained and shows how the process of executing their work influenced their overall design process. They present outstanding evidence of progressive refinement in their design process. The student presents how this progressive refinement leads to significant improvements in their design.

Creating & Crafting 4.2 – **FINALS** – The student presents the influence of making in their design process.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student presents a haphazard approach to making. They cannot articulate any specific design insights derived from their making.	The student can point at some relevant making and prototyping activities that they conducted and shows how these influenced their overall design process. There is no evidence of progressive refinement in their design process.	The student demonstrates their making skills by pointing at the results they obtained and shows how the process of executing their work influenced their overall design process. They present satisfactory evidence of progressive refinement in their design process.	The student demonstrates their making skills by pointing at the results they obtained and shows how the process of executing their work influenced their overall design process. They present outstanding evidence of progressive refinement in their design process. The student presents how this progressive refinement leads to significant improvements in their design	Same as “good.” What the student shows, discusses, or reflects upon is particularly strong. The student’s engagement with the subject matter is outstanding.

Creating & Crafting 4.3 – **MIDTERM** – The student applies aesthetic, technical, or design conventions where relevant in their work.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student does not show awareness of how other designers have addressed similar challenges before, and of which conventions are used in certain cases.	By pointing at elements in their work, the student shows awareness of similar designs and related conventions. They explain why specific conventions are relevant to the example they're pointing at. The explanation is not fully satisfying (e.g., it is commonsensical, ignores context or other conventions…).	By pointing at elements in their work, the student shows awareness of similar designs and related conventions. They explain convincingly why these conventions are relevant to their work.	By pointing at elements in their work, the student shows awareness of similar designs and related conventions. They explain convincingly why these conventions are relevant to their work. When not suitable for their work, they adequately justify breaking away from known conventions.

Creating & Crafting 4.3 – **FINALS** – The student applies aesthetic, technical, or design conventions where relevant in their work.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student does not show awareness of how other designers have addressed similar challenges before, and of which conventions are used in certain cases.	By pointing at elements in their work, the student shows awareness of similar designs and related conventions. They explain why specific conventions are relevant to the example they're pointing at. The explanation is not fully satisfying (e.g., it is commonsensical, ignores context or other conventions…).	By pointing at elements in their work, the student shows awareness of similar designs and related conventions. They explain convincingly why these conventions are relevant to their work.	By pointing at elements in their work, the student shows awareness of similar designs and related conventions. They explain convincingly why these conventions are relevant to their work. When not suitable for their work, they adequately justify breaking away from known conventions.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Self-Directed Learning 5.1 – **MIDTERM** – The student reflects on their progress towards specific learning goals.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot articulate which learning goals they pursued. The student cannot explain a concrete plan they followed to reach a learning goal.	The student reflects on which learning goals they achieved and how they reached them. The student struggles to put them in a broader perspective and to formulate their next logical goals for the near future.	The student reflects on which learning goals they achieved and how they reached them. The student puts their learning goals in the broader perspective of their personal or professional development. They express what they want to learn next, with a concrete plan to do so.	The student reflects on which learning goals they achieved and how they reached them. The student puts their learning goals in the broader perspective of their personal or professional development. They express what they want to learn next, with a concrete plan to do so. The student is proactive in initiating their own concrete plans.

Self-Directed Learning 5.1 – **FINALS** – The student reflects on their progress towards specific learning goals.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot articulate which learning goals they pursued. The student cannot explain a concrete plan they followed to reach a learning goal.	The student reflects on which learning goals they achieved and how they reached them. The student struggles to put their learning goals in a broader perspective and to formulate their next ones for the near future.	The student reflects on which learning goals they achieved and how they reached them. The student puts their learning goals in the broader perspective of their personal or professional development. They express what they want to learn next, with a concrete plan to do so.	The student reflects on which learning goals they achieved and how they reached them. The student puts their learning goals in the broader perspective of their personal or professional development. They express what they want to learn next, with a concrete plan to do so. The student is proactive in initiating their own concrete plans.	Same as “good.” What the student shows, discusses, or reflects upon is particularly strong. The student’s engagement with the subject matter is outstanding.

Self-Directed Learning 5.2 – **MIDTERM** – The student describes their personal exploration of ideas, technologies, or communities of designers. This exploration is relevant to the student's work.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot describe their exploration of ideas, technologies, or communities of designers. The student cannot connect the ideas, technologies, or communities that they presented to their own work.	The student mentions ideas, technologies, or communities of designers that are relevant to their work. The student presents a superficial exploration on these ideas, technologies, or communities. The student's engagement with these ideas, technologies, or communities is limited and passive.	The student mentions ideas, technologies, or communities of designers that are relevant to their work. The student describes how they engaged actively and personally with these ideas, technologies, or communities.	The student mentions ideas, technologies, or communities of designers that are relevant to their work. The student describes how they engaged actively and personally with these ideas, technologies, or communities. The student is proactive in connecting the MDD program with their own interests.

Self-Directed Learning 5.2 – **FINALS** – The student describes their personal exploration of ideas, technologies, or communities of designers. This exploration is relevant to the student's work.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot describe their exploration of ideas, technologies, or communities of designers. The student cannot connect the ideas, technologies, or communities that they presented to their own work.	The student mentions ideas, technologies, or communities of designers that are relevant to their work. The student presents a superficial exploration on these ideas, technologies, or communities. The student's engagement with these ideas, technologies, or communities is limited and passive.	The student mentions ideas, technologies, or communities of designers that are relevant to their work. The student describes how they engaged actively and personally with these ideas, technologies, or communities.	The student mentions ideas, technologies, or communities of designers that are relevant to their work. The student describes how they engaged actively and personally with these ideas, technologies, or communities. The student is proactive in connecting the MDD program with their own interests.	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.

Self-Directed Learning 5.3 – **MIDTERM** – The student reflects upon their individual contributions to a team.			
Insufficient (0-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot provide a description of their role and their relevance in a team. The student cannot reflect on the positive and negative aspects of their contribution to a team.	The student describes their contribution to a team with concrete examples. The critical reflection on the student's contribution to a team is lacking.	The student describes their contribution to a team with concrete examples. They provide a reflective critique of their contribution and identify what could be improved.	The student describes their contribution to a team with concrete examples. They provide a reflective critique of their contribution and identify what could be improved. The student is aware of larger team dynamics and can identify what the team should do to improve collectively (in addition to what they could do individually).

Self-Directed Learning 5.3 – **FINALS** – The student reflects upon their individual contributions to a team.				
Severely insufficient (0-3.9)	Weakly insufficient (4-5.4)	Sufficient (5.5-6.9)	Good (7-8.4)	Excellent (8.5-10)
The student cannot provide a description of their role and their relevance in a team. The student cannot reflect on the positive and negative aspects of their contribution to a team.	The student describes their contribution to a team with concrete examples. The critical reflection on the student's contribution to a team is lacking.	The student describes their contribution to a team with concrete examples. They provide a reflective critique of their contribution and identify what could be improved.	The student describes their contribution to a team with concrete examples. They provide a reflective critique of their contribution and identify what could be improved. The student is aware of larger team dynamics and can identify what the team should do to improve collectively (in addition to what they could do individually).	Same as "good." What the student shows, discusses, or reflects upon is particularly strong. The student's engagement with the subject matter is outstanding.